

WHAT IS CLAIMED IS:

1. A print control program executed by an information processing apparatus that transmits print data to an image-forming device and records an image,
5 the program comprising:
 - code for causing said information processing apparatus to execute a spooling step of further re-spooling, as a second spool file, print data spooled by
10 an operating system as a first spool file; and
 - code for causing said information processing apparatus to execute a transmission step of reading out and transmitting to the image-forming device a portion of the print data re-spooled as the second spool file
15 during re-spooling in said spooling step.
2. The print control program according to claim 1, wherein the program further comprises:
 - code for causing said information processing
20 apparatus to execute an attaching step of attaching to the print data re-spooled in said spooling step a first job identifier and a second job identifier different from the first job identifier; and
 - code for causing said information processing
25 apparatus to execute a managing step of managing jobs based on the second job identifier.

3. The print control program according to claim 2, wherein the first job identifier is an identifier issued via the operating system.

5 4. The print control program according to claim 1, wherein said transmission step comprises a segmented transmission step in which print data in the second spool file is divided and transmitted to said image-forming device in segments.

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5. The print control program according to claim 4, wherein:

said transmission step comprises a write finish detection step of detecting an end of spooling of the
15 second spool file in said spooling step; and

in said segmented transmission step the print data in the second spool file is transmitted to said image-forming device in segments if the second spool file write finish is not detected in said write finish
20 detection step.

6. The print control program according to claim 4, wherein said segmented transmission step comprises:

25 a data amount detection step of detecting an amount of data not yet transmitted to said image-forming device in the second spool file;

a data determination step of determining whether or not the amount of data detected in said data amount detection step is below a predetermined threshold; and

a data transmission step of transmitting to said
5 image-forming device the print data in the second spool file in segments if it is determined in said data determination step that the amount of data is below the threshold.

10 7. The print control program according to claim 6, wherein said segmented transmission step repeatedly executes said data transmission step at intervals shorter than that in which an interface time out is generated at said image-forming device, until
15 the amount of data is determined in said determination step to be above the threshold.

8. The print control program according to claim 1, further comprising a retransmission step of
20 retransmitting to said image-forming device said print data re-spooled as the second spool file in said spooling step before the re-spooling in said spooling step is finished if transmission to said image-forming device of the print data is stalled.

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9. The print control program according to claim 8, wherein said retransmission step comprises:

a display step of displaying a status of said print data re-spooled as the second spool file in said spooling step; and

if print data for which transmission to said
5 image-forming device is interrupted due to error is displayed in said display step, an accepting step of accepting an instruction to retransmit such print data.

10. The print control program according to
10 claim 9, wherein said retransmission step further comprises an identification step of identifying print data for retransmission using the second job identifier.

11. A computer-readable recording medium
15 containing a print control program executed by an information processing apparatus that transmits print data to an image-forming device and records an image, the program comprising:

code for causing said information processing
20 apparatus to execute a spooling step of further re-spooling, as a second spool file, print data spooled by an operating system as a first spool file and then once de-spooled; and

code for causing said information processing
25 apparatus to execute a transmission step of reading out and transmitting to said image-forming device a portion of said print data re-spooled as the second spool file

during re-spooling in said spooling step.

12. An information processing apparatus for transmitting print data to an image-forming device and
5 recording an image, the apparatus comprising:

a spooling unit for further re-spooling, as a second spool file, print data spooled by an operating system as a first spool file and then once de-spooled; and

10 a transmission unit for reading out and transmitting to said image-forming device a portion of said print data re-spooled as the second spool file during re-spooling by said spooling unit.

15 13. The information processing apparatus according to claim 12, further comprising:

an attaching unit for attaching to the print data re-spooled by said spooling unit a first job identifier and a second job identifier different from the first
20 job identifier; and

a managing unit for managing jobs based on the second job identifier.

14. The information processing apparatus
25 according to claim 13, wherein the first job identifier is an identifier issued via the operating system.

15. The information processing apparatus according to claim 12, wherein said transmission unit comprises a segmented transmission unit for dividing and transmitting print data in the second spool file to
5 said image-forming device in segments.

16. The information processing apparatus according to claim 15, wherein:

said transmission unit comprises a write finish
10 detection unit for detecting an end of spooling of a spool file by said spooling unit; and

said segmented transmission unit transmits the print data in the second spool file to said image-forming device in segments if a spool file write finish
15 is not detected by said write finish detection unit.

17. The information processing apparatus according to claim 15, wherein said segmented transmission unit comprises:

20 a data amount detection unit for detecting an amount of data not yet transmitted to said image-forming device in the second spool file;

a data determination unit for determining whether or not the amount of data detected by said data amount
25 detection unit is below a predetermined threshold; and

a data transmitter for transmitting to said image-forming device the print data in the second spool

file in segments if it is determined by said data determination unit that the amount of data is below the threshold.

5 18. The information processing apparatus
according to claim 17, wherein said segmented
transmission unit repeatedly executes data transmission
by the data transmitter at intervals shorter than that
in which an interface time out is generated at said
10 image-forming device, until the amount of data is
determined by said determination unit to be above the
threshold.

 19. The information processing apparatus
15 according to claim 12, further comprising a
retransmission unit for retransmitting to said image-
forming device said print data re-spooled as the second
spool file by said spooling unit before the re-spooling
by said spooling unit is finished if transmission to
20 said image-forming device of the print data is stalled.

 20. The information processing apparatus
according to claim 19, wherein said retransmission unit
comprises:
25 a display unit for displaying a status of said
print data re-spooled as the second spool file by said
spooling unit; and

if print data for which transmission to said image-forming device is interrupted due to error is displayed by said display unit, an accepting unit for accepting an instruction to retransmit such print data.

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21. The information processing apparatus according to claim 20, wherein said retransmission unit further comprises an identifier for identifying print data for retransmission using the second job identifier.

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22. A print control program executed by an information processing apparatus that transmits print data to an image-forming device and records an image comprises:

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code for causing the information processing apparatus to execute a spooling step of further re-spooling print data spooled by an operating system; and

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code for causing the information processing apparatus to execute a transmission step of reading out and transmitting to the image-forming device a portion of the print data re-spooled, when an amount of data, which is re-spooled and not yet transmitted to said image-forming device, is below a predetermined threshold, during re-spooling in said spooling step.

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